New Hampshire Department of Transportation
Bureau of Bridge Maintenance

Project # 40776, Bridge # 097/094
Gilford, NH, Rte. 11B over Meadow Brook

For Bureau of Environment Use Only:
Permit Classification:
Total Impacts (sq. ft):
DES Filing Fee $
Voucher #

NH Wetlands Bureau Permit Application
INTRA-DEPARTMENT PROJECT INFORMATIONAL FORM

APPLICANT'S NAME: NH Department of Transportation

BUREAU: 26

CONTACT PERSON: Anthony Weatherbee

TELEPHONE #: 603-271-3667

EMAIL ADDRESS: aweatherbee@dot.state.nh.us

PROJECT NAME: Gilford 097/094

STATE #: 40776

WORK CLASS CODE: 198

ORG CODE: 3008

BRIDGE #: 097/094

PROPOSED ADVERTISING DATE: 1/1/2017

PROPOSED CONSTRUCTION DATE: 1/1/2017

Updated Info RFM1

DOES THE PROJECT HAVE ... SDICTIONAL IMPACT? (YES/NO)?
(*Used to determine amount of ... ting a target date)*

DOES THE PROJECT HAVE ... RISDICTIONAL IMPACT? (YES/NO)?
(*If Yes, Requires an Individua...*

DOES THE PROJECT INVO... /NO)? YES
(If YES, Wt404 Rules must be ...

DOES THE PROJECT REQU...

DOES THE PROJEC... NT IMPACTS (YES/NO)? NO
(If YES, mitigation is ...

DOES THE PROJEC... EAM CHANNEL AND/OR BANKS?
(If Yes, Mitigation is ... Channel_____, and Bank right _____?)

DOES PROJECT INVOLVE ANY STREAM CROSSINGS (YES/NO) YES

IS THE PROJECT LOCATED WITHIN A ¼ MILE OF A NH DESIGNATED RIVER (YES/NO)? NO
(If YES, Need to send a copy of the application to Local River Advisory Committee)

PROJECT DESCRIPTION: **The existing structure is a concrete frame bridge with a 12' span and is 31'-8" wide. The existing concrete deck slab is in poor condition with cracks, spalls and delamination. The deck slab will be replaced in kind.**

CONSTRUCTION SEQUENCE

1. Temporary scaffolding will be placed in the brook.
2. The concrete deck will be replaced.
3. Temporary scaffolding will be removed and the site will be restored to its original quality.

Note:

Project will use and maintain DES Best Management Practices at all stages of construction.

12. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.

Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

After-the-fact (ATF): work completed prior to receipt of this application by DES. Check box to indicate ATF.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland		☐ ATF		☐ ATF
Scrub-shrub wetland		☐ ATF		☐ ATF
Emergent wetland		☐ ATF		☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream		☐ ATF		☐ ATF
Perennial Stream / River	/	☐ ATF	642 / 52	☐ ATF
Lake / Pond	/	☐ ATF	91 / 5	☐ ATF
Bank - Intermittent stream	/	☐ ATF	/	☐ ATF
Bank - Perennial stream / River	/	☐ ATF	61 / 23	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
TOTAL	/		749 / 80	

13. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☒ Minimum Impact Fee: Flat fee of $ 200

☐ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking)	**794** sq. ft.	X	$0.20 =	$ **158.80**
Temporary (seasonal) docking structure:	sq. ft.	X	$1.00 =	$
Permanent docking structure:	sq. ft.	X	$2.00 =	$
Projects proposing shoreline structures (including docks) add $200 =				$
Total =				$
The Application Fee is the above calculated Total or $200, whichever is greater =				$ **200.00**

Hydraulic Data

Drainage Area – 2.10 sq mi

Q 100 = 270 cfs

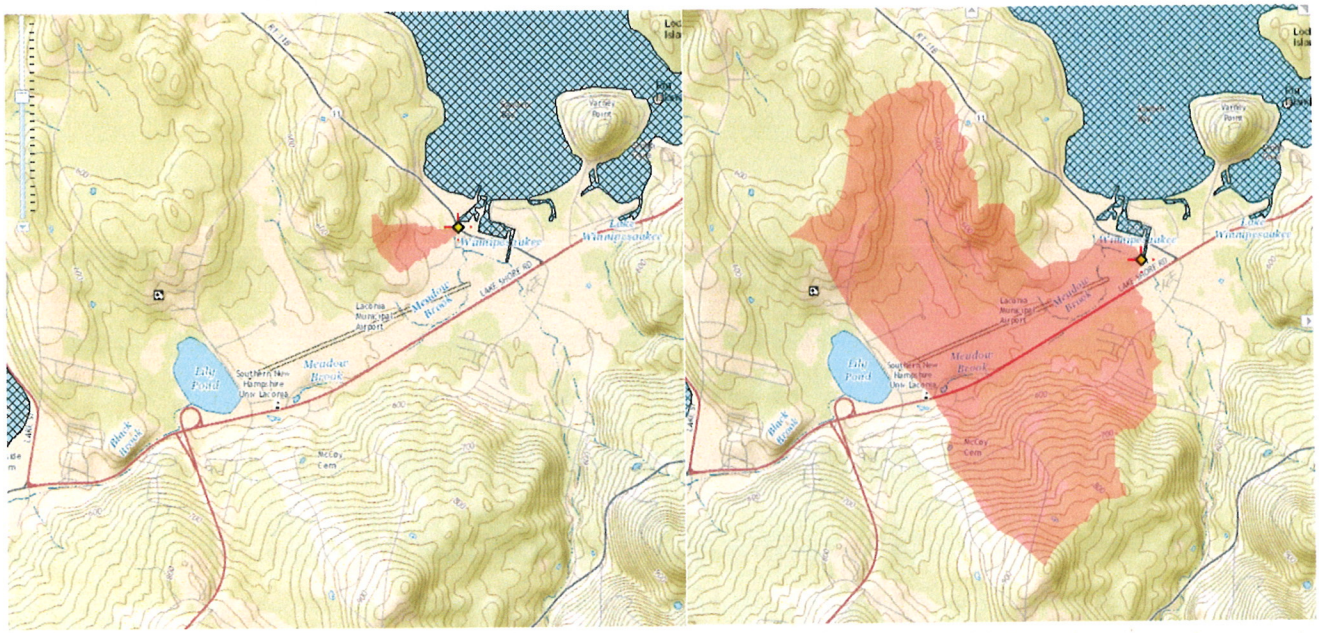


Figure 7: Watershed (Combine both due to NH Streamstats error).

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
LAND RESOURCES MANAGEMENT
WETLANDS BUREAU
29 Hazen Drive, PO Box 95, Concord, NH 03302-0095
Phone: (603) 271-2147 Fax: (603) 271-6588
http://des.nh.gov/organization/divisions/water/wetlands/index.htm
Permit Application Status: http://des.nh.gov/onestop/index.htm

PERMIT APPLICATION – ATTACHMENT A
MINOR & MAJOR 20 QUESTIONS

Env-Wt 302.04 Requirements for Application Evaluation – For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

This structure has a concrete deck that is in poor condition. The existing concrete deck slab has cracks, spalls and delamination. It is necessary to impact jurisdictional areas to provide for the repairs. The impacts are for temporary scaffolding and for temporary construction access. If the structure is not rehabilitated, it will eventually be load posted or closed.

2. That the alternative proposed by the applicant is the one with the least impact to the wetlands or surface waters on site.

The alternatives considered are as follows:

Replace structure with a new structure in compliance with the NH Stream Crossing Guidelines: According to the NH Stream Crossing Guidelines, if a new structure were to be constructed at this location it would require a span of 24'-0". A structure of this size would cost approximately $750,000. Spending this much money on a structure that could be adequately preserved for approximately $100,000 would not be a practicable use of resources. There would also be significant wetland impacts if a structure of this size were installed due to the additional footprint and for construction.

Replace concrete deck: This is the chosen alternative. Impacts for replacing the deck and repairing the substructure are limited to temporary impacts to provide for scaffolding and construction access. The impacts for the deck replacement are less than they would be for the larger structure alternative. This is the most cost-effective and lowest impact solution to prolong the life of the structure.

In the November 18, 2015 Natural Resource Agency Coordination Meeting it was requested by NH Fish and Game that any equipment used in the water, including scaffolding, be washed off prior to leaving the job site in order to prevent the spread of Milfoil. All equipment will be washed in accordance with this request and any additional conditions listed in the permint.

It was proposed in the original application to repair riprap located onsite. After further consideration these riprap repairs have been removed from the scope of the project.

3. The type and classification of the wetlands involved.

R2UB2: Riverine, lower perennial, unconsolidated bottom, sand

L2UB2: Lacustrine, littoral, unconsolidated bottom, sand

Bank

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

Meadow Brook flows into Lake Winnipesaukee

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

Meadow Brook has not been identified as a rare surface water of the state.

6. The surface area of the wetlands that will be impacted.

642ft^2 Riverine (642ft^2 temporary, 0ft^2 permanent)
91ft^2 Lacustrine (91ft^2 temporary, 0ft^2 permanent
61ft^2 Bank (61ft^2 temporary, 0ft^2 permanent)

7. The impact on plants, fish, and wildlife, but not limited to:
   a. Rare, special concern species;
   b. State and federally listed threatened and endangered species;
   c. Species at the extremities of their ranges;
   d. Migratory fish and wildlife;
   e. Exemplary natural communities identified by the DRED-NHB; and
   f. Vernal pools.

No rare or special concern species were identified within the proposed project area.

There were no State or Federally listed threatened or endangered species identified within the project limits.

As for the Northern Long-eared Bat (NLEB), tree clearing is not required as a result of the proposed work. Furthermore, the Bureau of Bridge Maintenance will be completing a Bridge Inspection Form no more than 7 days prior to commencing construction. If no signs of bat utilization are observed, and no clearing is proposed, the project will have No Effect on NLEB. If any signs of bat utilization are observed, work will not commence until coordination with USFWS and NHDOT Bureau of Environment has been completed.

There are no species known to be at the extremities of their ranges located in the project area.

Migratory fish and wildlife will be protected under the direction of NH Fish and Game.

The Department has coordinated with DRED and the results of the NHB review revealed no records in this area.

There were no vernal pools identified and/or delineated in the project area.

8. The impact of the proposed project on public commerce, navigation and recreation.

During construction, access to the nearby residents and/or commercial businesses will be maintained at all times. Access will be maintained by alternating traffic with a one lane closure. Meadow Brook is non-navigable water which makes it non-conducive to boaters. There is a marina and a pedestrian bridge located downstream of the structure and this project will not interfere. During construction fishing activities from the banks of the brook will need to occur outside of the construction work zone. When construction is completed, the project as proposed will be a benefit to the public commerce.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The project will not significantly interfere with the aesthetic interests of the general public. The proposed improvements will be more pleasing to the eye than the structure in poor condition.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will not interfere with or obstruct public rights of passage or access. During construction at least one lane of alternating traffic will be maintained at all times. This will ensure access to all nearby businesses and residential homes in this area. Upon completion of this project the bridge will be reopened to two way traffic.

11. The impact upon the abutting pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to riprap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.
The project is expected to have a positive impact on abutting properties. The rehabilitated structure will better serve the abutting properties if they need to travel on the road. **The project as proposed will not alter the chance of flooding on abutting properties.**
12. The benefit of a project to the health, safety, and well-being of the general public.
The project will provide a safer, longer lasting structure and roadway. If the structure is not rehabilitated, the bridge will eventually be load posted or closed. Keeping the roadway open benefits commerce, trade, emergency access, etc, for the general public.
13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and difference in the quality of water entering and exiting the site.
The surface water currently runs off the bridge at the curb lines, to the wingwalls, and then off the structure. Upon completion of the project surface will drain water in the same manner. This will have no adverse effects on the quality or quantity of surface and ground water. Best Management Practices will be used to prevent any adverse effect to water quality during construction.
14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.
Flooding: High and low flows will not be changed as a result of this project. **Erosion: The project as proposed will not cause or increase erosion.** **Sedimentation: Nothing that will be a barrier to sediment transport will be installed in this project.**
15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.
Surface waters will not be reflected or redirected as a result of this project. Meadow Brook does not have enough surface water for wave energy to be an issue.
16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alternations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage ownership of that wetland and the percentage of that ownership that would be impacted.
The work consists of a repair of an existing bridge structure. There are no similar structures in the vicinity owned by other parties that would require repair.
17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.
The value of the wetland as a habitat for living organisms will be unchanged. The project will be constructed outside the fish spawning season. A function of Meadow Brook is to carry water from a higher elevation to a lower elevation. This project will not interfere with that function.
18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.
This project is not located in or near any Natural Landmarks listed on the National Register.

19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.
There are no areas named in acts of congress or presidential proclamations as national rivers, national wildness areas, or national lakeshores that will be impacted as a result of this project.
20. The degree to which a project redirects water from one watershed to another.
The project as proposed will not redirect water from one watershed to another.

Additional comments

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGE MAINTENANCE
7 Hazen Drive, PO Box 483, Concord, NH 03302-0095
Phone: (603) 271-3667 Fax: (603) 271-1588

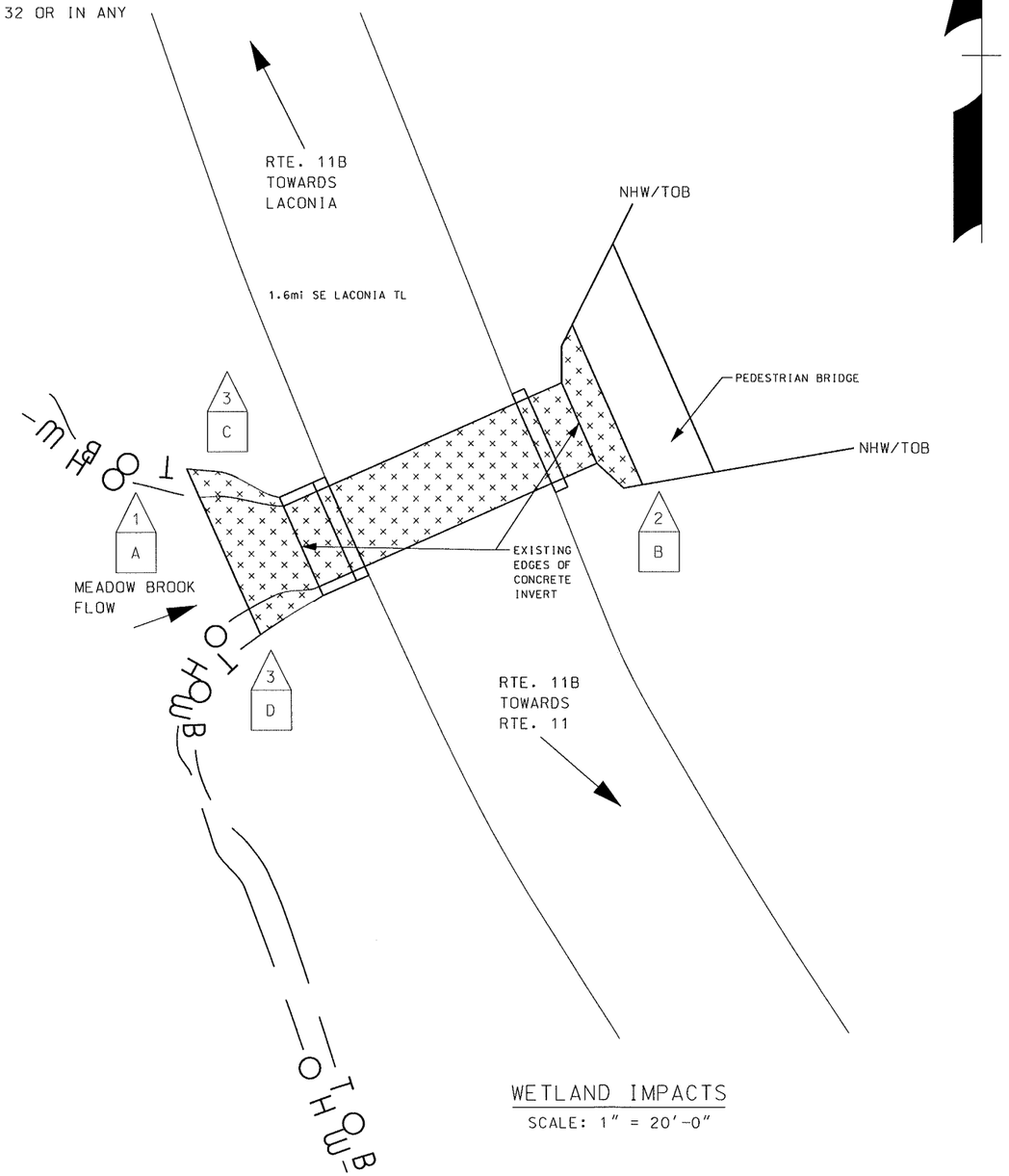
WETLANDS PERMIT APPLICATION – ATTACHMENT C
Stream Crossing Requirements & Information

Env-Wt 904.09(a) – If the applicant believes that installing the structure specified in the applicable rule is not practicable then the applicant may propose an alternative design in accordance with this section.
1. Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as "*available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes*") *(question 2, Attachment A, Minor and Major 20 Questions)*;
Meadow Brook has a drainage area of 2.1 square miles which qualifies this stream as a Tier 3 Crossing. The required span based on the NH Stream Crossing Guidelines for a new crossing 24'-0". A structure of this size would cost approximately $750,000. Spending this much money on a structure that could be adequately preserved for approximately $100,000 would not be a practicable use of resources. There would be a significant increase in wetland impacts if a structure of this size were installed due to the additional footprint and for construction.
2. Please explain how the proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the *maximum extent practicable*. Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings – New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed…
…In accordance with the NH Stream Crossing Guidelines:
The NH Stream Crossing Guidelines do not mention maintenance to a structure in a Tier 3 watershed. **The proposed structure will match the existing slope and alignment.** **The bottom of the existing structure is currently a concrete invert. This condition will not be changed as a result of this project.** **Wildlife passage will be not be changed as a result of this project.** **The proposed structure will maintain the flow depths found in the existing structure.** **The hydraulic capacity of the structure will not be changed.**
…With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing:
Water depths and velocities within the crossing at a variety of flows will be comparable to the existing depths and velocities. These flows are comparable to those found in the natural channel upstream and downstream of the stream crossing.
…To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage:
It is not possible to provide vegetated banks on both sides of the watercourse below the roadway, regardless of the type of structure installed. Wildlife passage will not be altered as a result of this project.
…To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the function of the natural floodplain *(questions 14 and 15, Attachment A, Minor and Major 20 Questions)*;
Accommodation of natural flow regimes will not be changed as a result of this project.

...To accommodate the 100-year frequency flood and to ensure that there is no increase in flood stages on abutting properties *(questions 11 and 14, Attachment A, Minor and Major 20 Questions)*:
Accommodation of the 100-year frequency flood will not be changed as a result of this project.
...To simulate a natural stream channel:
The project as proposed will not alter the existing stream channel.
...So as not to alter sediment transport competence *(question 14, Attachment A, Minor and Major 20 Questions)*:
Nothing that will be a barrier to sediment transport will be installed during this project.
Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:
(a) Not be a barrier to sediment transport *(question 14, Attachment A, Minor and Major 20 Questions)*;
Nothing that will be a barrier to sediment transport will be installed during this project.
(b) Prevent the restriction of high flows and maintain existing low flows *(question 14, Attachment A, Minor and Major 20 Questions)*;
High flows will not be restricted, and low flows will be maintained as a result of this project.
(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the water body beyond the actual duration of construction *(question 7, Attachment A, Minor and Major 20 Questions)*;
Movement of aquatic life will not be altered as a result of this project beyond the actual duration of construction.
(d) Not cause an increase in the frequency of flooding or overtopping of banks *(question 14, Attachment A, Minor and Major 20 Questions)*;
This project will not increase the frequency of flooding. High flows will not be restricted, and low flows will be maintained as a result of this project.
(e) Preserve watercourse connectivity where it currently exists *(question 15, Attachment A, Minor and Major 20 Questions)*;
Connectivity will remain unchanged with the proposed structure and will not be worsened.
(f) Restore watercourse connectivity where...
...connectivity previously was disrupted as a result of human activity(ies) *(question 15, Attachment A, Minor and Major 20 Questions)*;
Connectivity will remain unchanged with the proposed structure and will not be worsened.
...restoration of connectivity will benefit aquatic life upstream or downstream of the crossing *(question 15, Attachment A, Minor and Major 20 Questions)*;
Aquatic life upstream and downstream will not be affected as a result of this project.
(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing *(question 14, Attachment A, Minor and Major 20 Questions)*;
Aggradation: This project will not affect aggradation at the project location. **Erosion: The project as proposed will not cause or increase erosion.** **Sedimentation: Nothing that will be a barrier to sediment transport will be installed in this project.**

(h) Not cause water quality degradation *(question 13, Attachment A, Minor and Major 20 Questions)*.
The project as proposed will not impact the quantity or quality of surface and/or groundwater at this site. Best Management Practices will be used to prevent any adverse effect to water quality during construction.

NOTE:
NO RIPRAP WILL BE PLACED BELOW ELEVATION 504.32 OR IN ANY JURISDICTIONAL AREAS.



WETLAND IMPACTS
SCALE: 1" = 20'-0"

10 0 10 20
SCALE IN FEET

WETLAND IMPACT SUMMARY					
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA		
			PERMANENT IMPACTS		TEMPORARY IMPACTS
			N.H.W.B. (NON-WETLAND) SF	N.H.W.B. & A.C.O.E. (WETLAND) SF	SF
1	R2UB2	A			642
2	L2UB2	B			91
3	BANK	C			32
3	BANK	D			29
		E			
		F			
		G			
		H			
		I			

PERMANENT IMPACTS: 0 SF
TEMPORARY IMPACTS: 794 SF
TOTAL IMPACTS: 794 SF

WETLAND CLASSIFICATION CODES	
R2UB2	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, SAND
L2UB2	LACUSTRINE, LITTORAL, UNCONSOLIDATED BOTTOM, SAND
BANK	

LEGEND

TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

WETLAND DESIGNATION NUMBER
WETLAND IMPACT LOCATION
WETLAND MITIGATION AREA
MITIGATION

WETLANDS DELINEATED BY MATT URBAN ON 10/2015

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN GILFORD BRIDGE NO. 097/094 STATE PROJECT 40776
LOCATION RTE. 11B OVER MEADOW BROOK

WETLAND IMPACTS

BRIDGE SHEET 1 OF 1

	REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
ANW	REMOVED RIPRAP	4/18/16	DESIGNED ANW	11/17/15	CHECKED SWJ	11/30/15	
			DRAWN ANW	11/17/15	CHECKED SWJ	11/30/15	
			QUANTITIES		CHECKED		
			ISSUE DATE		FISCAL YEAR 2016	CREW 03	SHEET NO. 1
			REV. DATE				TOTAL SHEETS 1

FILE NUMBER GILFORD 097/094

SHEET SCALE
AS NOTED